

Exhibit 3

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

WAYMO LLC,)
)
Plaintiff,)
)
vs.) Case No.
) 17-cv-00939-WHA
UBER TECHNOLOGIES, INC.;)
9 OTTOMOTTO, LLC; OTTO TRUCKING LLC,)
)
Defendants.)
_____)

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VIDEOTAPED DEPOSITION OF
LAMBERTUS HESSELINK, Ph.D.
San Francisco, California
Tuesday, September 26, 2017
Volume I

Reported by:
MARY J. GOFF
CSR No. 13427
Job No. 2714543

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1 [REDACTED] [REDACTED]
2 [REDACTED] [REDACTED]
3 [REDACTED] [REDACTED]
4 [REDACTED] [REDACTED]
5 [REDACTED] 02:48:05
6 MR. NEUKOM: Objection to form. 02:48:11
7 A I have -- 02:48:12
8 MR. NEUKOM: Objection to form. 02:48:12
9 A -- I have no knowledge of that. 02:48:13
10 Q (BY MR. JACOBS) The -- when you said it's 02:48:15
11 an incredible -- I think your words were it's an 02:48:17
12 extraordinary challenge or an incredible challenge. 02:48:18
13 What -- what exactly did you mean by that? What's 02:48:21
14 so hard about this problem? 02:48:25
15 A In some form the way I think about it is 02:48:28
16 you kind of have to figure out what goes on in the 02:48:31
17 human mind. You have got sensory information. 02:48:34
18 You have learned -- I mean, a toddler 02:48:38
19 cannot drive a car. So you have learned how you 02:48:41
20 actually maneuver a vehicle after you have taken 02:48:44
21 lessons in an environment where you may have some 02:48:48
22 inclination as to what happens, but you never really 02:48:51
23 know what happens. 02:48:55
24 It could be an emergency vehicle going in 02:48:56
25 your direction while you're going in one direction 02:48:58

1 north. They come south and they're passing another 02:49:01
2 car. 02:49:01
3 THE COURT REPORTER: What's -- Going in 02:49:03
4 one direction? Repeat. 02:49:03
5 A I'm sorry? 02:49:04
6 Q (BY MR. JACOBS) It could be an emergency 02:49:06
7 vehicle going in your direction -- 02:49:08
8 A And -- 02:49:11
9 Q -- so you're going -- 02:49:11
10 A -- yeah, and you're going in the south 02:49:12
11 direction in the same lane. 02:49:14
12 There are a number of scenarios that you 02:49:15
13 cannot predict. Yet, a human is capable somehow of 02:49:19
14 dealing with that. 02:49:24
15 And as far as I know, nobody knows how the 02:49:26
16 brain works precisely. There's lots of money and 02:49:30
17 time spent into it. And nobody really knows what 02:49:32
18 happens when I get a signature, either orally, 02:49:36
19 acoustics, or an image. And maybe there is an 02:49:40
20 acceleration, a deceleration. There are other 02:49:47
21 inputs into my system. 02:49:49
22 And I make certain decisions. All of that 02:49:51
23 in some form or another. And on top of it you have 02:49:54
24 to essentially predict: What is the other person 02:49:57
25 going to do? So assume that you have a -- 02:50:01

1 THE COURT REPORTER: Please slow down. 02:50:01

2 A And on top of that you would have to 02:50:02

3 predict what the other is going to do. 02:50:03

4 [REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]

14 Q So you said -- you said "Uber," but you 02:50:37

15 mean Google, right? 02:50:38

16 A Oh, sorry. Google, yeah. That was a 02:50:40

17 mistake. And so -- so what -- what you see there 02:50:43

18 is -- is that the software is only as good as the 02:50:45

19 algorithms that the developers put into it. 02:50:50

20 And if the developers don't understand 02:50:52

21 human behavior of all of the test cases, it's very 02:50:55

22 difficult to build a system that incorporates that 02:50:58

23 knowledge. 02:51:01

24 And the only way you can do that, which is 02:51:01

25 the way I think that Waymo is doing it, is you just 02:51:04

1 drive these vehicles millions of miles so that you 02:51:06
2 have lots of incidents that you have to work on to 02:51:09
3 fix them. And even then you will not be perfect. 02:51:12
4 Q The -- what you were just describing for 02:51:17
5 Google or Waymo would also apply to Uber, correct, 02:51:19
6 in terms of when -- when Uber can actually deploy 02:51:22
7 fully autonomous vehicles? 02:51:26
8 MR. NEUKOM: Objection to form. 02:51:28
9 A Yes. You would definitely have to test 02:51:28
10 out your vehicles. 02:51:34
11 Q (BY MR. JACOBS) And in the case of Uber or 02:51:36
12 perhaps for Waymo, the idea that we might use a 02:51:38
13 ride-hailing service that would bring to us a fully 02:51:41
14 autonomous vehicle without a safety driver, what 02:51:44
15 does that challenge look like to you in terms of 02:51:47
16 what's ahead for those -- for those companies trying 02:51:50
17 to develop that capability? 02:51:53
18 MR. NEUKOM: Objection to form. 02:51:55
19 A You're asking me that now independent of 02:51:58
20 what I have done in this document, I presume, right? 02:52:01
21 Q (BY MR. JACOBS) I don't think you asked 02:52:03
22 that question in your document, but you -- this is 02:52:05
23 about -- this document is about the use of LiDAR and 02:52:07
24 autonomous vehicles, so that's why I'm asking you 02:52:10
25 these questions. 02:52:11

1 I, MARY J. GOFF, CSR No. 13427, Certified
2 Shorthand Reporter of the State of California,
3 certify;

4 That the foregoing proceedings were taken
before me at the time and place herein set forth, at
5 which time the witness declared under penalty of
6 perjury; that the testimony of the witness and all
7 objections made at the time of the examination were
8 recorded stenographically by me and were thereafter
transcribed under my direction and supervision; that
9 the foregoing is a full, true, and correct
10 transcript of my shorthand notes so taken and of the
11 testimony so given;

That before completion of the deposition,
12 review of the transcript () was (XX) was not
13 requested: () that the witness has failed or
14 refused to approve the transcript.

15 I further certify that I am not financially
interested in the action, and I am not a relative or
16 employee of any attorney of the parties, nor of any
17 of the parties.

18 I declare under penalty of perjury under the
19 laws of California that the foregoing is true and
20 correct, dated this 27th day of September 2017.

21
22
23
24 

25 MARY J. GOFF, CSR No. 13427